

COMMONWEALTH OF VIRGINIA
Department of Environmental Quality

Subject: Waste Guidance Memo No. ## (previously Guidance Memo No. 02-2005)
Criteria for Increasing, Decreasing, or Terminating Post-Closure Care Requirements at Solid Waste Management Facilities

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Summary:

The Virginia Solid Waste Management Regulations (VSWMR), 9 VAC 20-80-10 et seq., require solid waste disposal facilities to perform post-closure care (PCC) following closure of a unit or the facility. Facilities are required to perform PCC in order to ensure protection of human health and the environment. The length of the PCC period may be decreased or increased by the Director under the authority of §10.1-1410.2 and 9 VAC 20-80-250 F, 260 F, and 270 F. This guidance provides criteria to be used when deciding whether the PCC period and/or individual PCC requirements should be increased, decreased, or terminated.

Electronic Copy:

An electronic copy of this guidance is available on DEQ's website at <http://www.deq.virginia.gov/>_____.

Contact Information:

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Disclaimer:

This document is provided as guidance and, as such, sets forth standard operating procedures for the agency. However, it does not mandate any particular method nor does it prohibit any alternative method. If alternative proposals are made, such proposals should be reviewed and accepted or denied based on their technical adequacy and compliance with appropriate laws and regulations.



Criteria for Increasing, Decreasing or Terminating Post-Closure Care Requirements at Solid Waste Management Facilities

STAFF GUIDANCE

I. INTRODUCTION

The Virginia Solid Waste Management Regulations (VSWMR), 9 VAC 20-80-10 et seq., require solid waste disposal facilities to perform post-closure care (PCC) following closure of a unit or the facility. Facilities are required to perform PCC in order to ensure protection of human health and the environment. Facilities include, but are not limited to, sanitary landfills (SLF), construction and demolition debris (CDD) landfills, and industrial landfills (ILF). Facilities include lined as well as unlined facilities. PCC requirements include, but are not limited to, groundwater monitoring, gas monitoring, leachate collection, stormwater management, and final cover maintenance.

By regulation, SLFs that were not closed prior to December 21, 1988, but stopped receiving waste before October 9, 1993, are subject to PCC requirements for ten (10) years. SLF that ceased to accept waste on or after October 9, 1993, are required to conduct PCC for thirty (30) years. CDD and ILF are required to conduct PCC for ten (10) years or until leachate is no longer generated, whichever is longer.

The length of the PCC period may be decreased or increased by the Director under the authority of §10.1-1410.2 and 9 VAC 20-80-250 F, 260 F, and 270 F. This guidance provides criteria to be used when deciding whether the PCC period and/or individual PCC requirements should be increased, decreased, or terminated.

Following completion of the PCC period for each disposal unit, the owner or operator shall submit to the Department a certificate, signed by a registered professional engineer, verifying that post-closure care has been completed in accordance with the post-closure plan. The certificate shall be accompanied by an evaluation, prepared by a professional engineer licensed in the Commonwealth and signed by the owner or operator, assessing and evaluating the landfill's potential for harm to human health and the environment in the event that post-closure monitoring and maintenance are discontinued. The certification and evaluation is to be submitted according to the guidance contained in "*Submission Instruction 20: Components of the Professional Engineer's Certification and Evaluation*" (SI 20) required by §10.1-1410.2 B of the Code of Virginia.

II. DEFINITIONS

"*Closure*" means the act of securing a solid waste management facility pursuant to the requirements found in the Virginia Solid Waste Management Regulations, 9 VAC 20-80-10 et seq.

“*Department*” means the Department of Environmental Quality.

“*DEQ*” means the Department of Environmental Quality.

“*Director*” means the Director of the Department of Environmental Quality or his designee.

“*Facility*” means a solid waste management facility and includes sanitary landfill, construction and demolition debris landfill, and industrial landfill.

“*GPS*” means groundwater protection standards established for a specific facility.

“*LEL*” means the lower explosive limit of methane gas.

“*Post-closure care requirements*” means the requirements placed upon solid waste disposal facilities after closure to ensure the protection of human health and the environment for a specified number of years after closure.

Post-closure care period” is the specified number of years during which PCC activities are performed, i.e., 10/30 years or a period as specified by the DEQ.

“*VSWMR*” means the Virginia Solid Waste Management Regulations, 9 VAC 20-80-10 et seq.

III. GUIDANCE

This Guidance and SI 20 are to be used by the Permittee to prepare documents containing an appropriate level of information for the DEQ to evaluate the request to decrease or terminate PCC requirements. The applicant should be advised that evaluations not formatted according to or not containing the information outlined in this Guidance or SI 20 may take longer to review and may not contain the documentation necessary for the DEQ to render a decision.

III.A. DEQ Review

The following areas shall be considered when evaluating the facility to determine whether the PCC period may be decreased, increased, or terminated:

- groundwater monitoring
- surface water monitoring
- gas monitoring
- maintenance of monitoring systems
- leachate management
- stormwater management
- final cover integrity

Additional PCC requirements found in the permit and/or the facility-specific PCC plans should be included in the evaluation.

If wastes are removed from a facility and disposed of at a permitted facility at the time of closure, the evaluation may indicate that a specific PCC requirement (e.g. stormwater management or maintenance of the final cover system) is no longer required due to the removal of the waste. The Department may require submission of evidence of proper management of the removed waste and may request evidence, including but not limited to confirmation sampling to verify the removal of the solid waste and/or any hazardous constituents. Justification for decreasing or terminating PCC requirement(s) must be submitted in order for the DEQ to consider the request.

III.B. Continuation of PCC requirements

The Director may not terminate PCC requirements or decrease the PCC period where a facility or a portion of the facility may pose a threat to human health or the environment. If one or more of the following conditions exist at the facility, the Director may not release an owner or operator from the applicable PCC requirements:

- The facility has uncorrected/outstanding violations or a history of violations of any environmental statutes or regulations during the PCC period.
- The facility has not completed corrective action for groundwater.
- The facility is violating water quality standards or contributing to the biological impairment of nearby surface water.
- Gas migration poses a threat to human health or the environment outside of the facility boundary, or within facility structures.
- Leachate quality or quantity poses a threat to human health or the environment.
- The final cover has had uncorrected or persistent maintenance issues through the PCC period, which may cause the facility to pose a threat to human health or the environment.
- Other permit or PCC conditions exist that the DEQ's evaluation deems will not protect human health or the environment.

The PCC period shall continue until the outstanding conditions are resolved and the facility no longer poses a threat to human health or the environment.

III.B.1. Multiple units

If a monitoring network serves multiple units, then the PCC period will begin upon closure of the last unit. Decreasing or terminating PCC requirements of independently monitored and maintained portions of a facility may be considered provided the certifications and evaluations meet the criteria for decreasing or terminating.

III.C. Components of the Post-Closure Care Period Review

III.C.1. Facility File Review

DEQ staff will perform a file review to verify the facility has met closure requirements in accordance with the VSWMR. At a minimum, DEQ staff will verify the department's files contain the following information:

- a complete copy of the approved permit
- a facility site plan in the form of a survey plat created by a licensed surveyor clearly delineating the waste management footprint [9 VAC 20-80-250 E.5.d(2), 260 E.4.c(2), 270 E.4.c(2)]
- documentation demonstrating the deed notification has been recorded with the local land recording authority [9 VAC 20-80-250 E.5.d(3), 260 E.4.c(3), 270 E.4.c(3)]
- documentation demonstrating a note has been placed on the survey plat restricting disturbance of the site [9 VAC 20-80-250 E.5.d(2), 260 E.4.c(2), 270 E.4.c(2)]
- a copy of the facility's closure plan [9 VAC 20-80-250 E.3.f, 260 E.2.f, 270 E.2.f]
- a copy of the PE's statement certifying the facility has been properly closed in accordance with the approved closure plan [9 VAC 20-80-250 E.5.d(4), 260 E.4.c(4), 270 E.4.c(4)]
- a letter from the DEQ certifying the facility is closed [9 VAC 20-80-250 E.6, 260 E.5, 270 E.5]
- a copy of the most recently approved PCC plan for the facility [9 VAC 20-80-250 F.5, 260 F.4, 270 F.4]

If the DEQ's files are lacking any of the above applicable information, the owner or operator will be asked to provide the missing documentation.

The date the facility began PCC will be verified. In most cases, PCC begins on the date the PE signed the certification stating the facility was properly closed. However, when the results of the DEQ's closure inspection reveal all provisions of closure have not been completed, the date the DEQ notified the facility that closure activities were completed is the day PCC begins.

During the file review, records of the sampling events required by the VSWMR, permit, and the PCC plan will be examined to determine if all required monitoring has been performed during the PCC period. Missing or incomplete sampling data should be noted as a deficiency.

If records are incomplete, additional PCC activities may be required to address the missing documentation. If certain closure documentation is not available, the applicable regulatory requirements at the time closure activities took place will be examined to determine if a violation of the regulations has occurred as well as the extent of the violation. Incomplete documentation may warrant a referral to the DEQ's compliance staff for further compliance or enforcement action against the facility.

III.C.2. Compliance Review

Compliance staff will review the compliance history of the owner or operator during the PCC period for violations of Virginia statute, the VSWMR, the facility permit and/or the PCC plan. The facility must be in full compliance with the aforementioned at the time the PCC requirements are decreased or terminated.

If violations for failure to comply with PCC requirements are identified, the severity of each violation will be examined to determine if the owner or operator has failed to protect human health or the environment during the PCC period. If the review indicates that the owner failed to protect human health or the environment, the PCC period may be extended and further compliance or enforcement action may be warranted.

If an enforcement action has been taken in response to violations at the facility during the PCC period or as a result of the review, the DEQ may request documentation from the owner or operator, in the form of additional monitoring, confirming that they have taken or will take the appropriate steps to protect human health and the environment and to prevent the violations from occurring at the facility in the future.

III.C.3. Groundwater Monitoring Review

The owner or operator may request a partial release from PCC. If the owner or operator satisfies the requirements of this section a request for the release from post-closure care groundwater monitoring may be prepared. The owner or operator should submit a certificate prepared by a professional engineer in accordance with this section of the guidance and applicable sections of SI 20. If approved, the owner or operator is only released from PCC groundwater monitoring and all other portions of PCC required by the VSWMR or the facility's permit must continue. If the owner or operator is released from groundwater monitoring while still operating an active gas extraction/collection system, the owner or operator may be required to make an additional demonstration that no impact to groundwater will occur on termination of the active gas extraction/collection system.

As part of the evaluation of groundwater monitoring activities at the facility, the DEQ will review the following:

III.C.3.a. Corrective Action

If the facility is undergoing corrective action for groundwater at the time of certification/evaluation, the facility will not be released from PCC groundwater monitoring requirements for groundwater until corrective action has been completed. A minimum of three (3) years of groundwater monitoring data indicating groundwater protection standards, established pursuant to 9 VAC 20-80-300B.3.h. or 300 C.4.d. as applicable, have not been exceeded is required before the owner or operator may request the Director to reduce or

terminate the PCC requirements for groundwater monitoring. Sufficient data is required to support the trend analysis required to demonstrate that constituent levels are decreasing.

Some remedial activities rely on physical, biological, or chemical alteration of the compounds and involve the introduction of a catalyst or chemical product to initiate the desired reaction. During this type of remediation, the groundwater chemistry in the treatment zone is not representative of groundwater conditions either before or following completion of the remedy. Therefore, the period of time following the active phase of the remedy (e.g., injection/application of treatment materials or groundwater extraction), during which the groundwater conditions (physical, biological, chemical or hydrogeologic) remain effected by the treatment, is considered part of the corrective action.

When the corrective action involves *in-situ* treatment- chemical, biologic or physical- all groundwater samples should be representative of conditions prior to the treatment or from areas not affected by the treatment (outside the treatment zone) both chemically and physically before the effectiveness of remedial activities is evaluated. For example, a remedy that involves the introduction of potassium permanganate would be considered *in progress* until such a time that the potassium and/or magnesium concentrations in the wells located in the treatment zone are at background levels. Caution should be exercised by the facility so that additives to the groundwater are not over-applied, extending the treatment period unnecessarily. For extraction techniques, groundwater flow should revert to essentially pre-extraction conditions prior to completing the corrective action.

III.C.3.b. Semi-annual or quarterly groundwater monitoring events

If all required groundwater monitoring has not been conducted according to the regulations and the facility permit during the PCC period, the DEQ may require additional monitoring to evaluate any potential impacts on the groundwater in the vicinity of the facility to ensure protection of human health and the environment. The DEQ may require the owner or operator to submit sufficient information to demonstrate the monitoring that has been performed, even if it is less than 10/30 years, is protective and appropriate.

III.C.3.c. Permittee response to request for modification of monitoring network

The Director will not release the owner or operator from PCC groundwater monitoring requirements if the owner or operator has failed to install additional monitoring wells when requested and the monitoring system at the facility is inadequate. An adequate groundwater monitoring plan/network must be in place for sufficient time to allow the groundwater trends to be evaluated accurately. The adequacy of the monitoring system will be based on the most recent annual groundwater monitoring report.

III.C.3.d. Failure to implement assessment or phase II monitoring or corrective action

The Director will not release the owner or operator from PCC groundwater monitoring requirements if monitoring or corrective action has not been implemented as required.

Additional groundwater monitoring events may be required by the DEQ to obtain information that was not obtained due to the improper monitoring of groundwater.

III.C.3.e. Submittal of required reports, notifications, and data

Data from all monitoring events must have been submitted for review during the PCC period. If not, the DEQ may ask for the data to be submitted. Additional monitoring may be required if data gaps exist in the most recent monitoring events.

III.C.3.f. Monitoring records

The Director will not release the owner or operator from PCC groundwater monitoring requirements if monitoring records are incomplete. Monitoring records are used to determine the impact (if any) a facility has had on groundwater. Without complete information, the DEQ is unable to determine the impact the facility has had on the groundwater. Monitoring data or additional monitoring events may be required prior to considering the release of the owner or operator from PCC requirements.

III.C.3.g. Off-site factors influencing groundwater

Off site factors influencing groundwater must be identified and discussed in the evaluation along with the projected duration of the influence on the groundwater flow.

III.C.3.h. Landfill Gas

If a facility currently is performing active extraction to mitigate landfill gas migration, the facility shall demonstrate that landfill gas generated by the waste unit will not impact groundwater. The Director will not release the owner or operator from PCC groundwater monitoring requirements if landfill gas migration is or has the potential to impact groundwater.

III.C.3.i. Increasing constituent levels

If an appropriate statistical test indicates any constituent levels have increasing trends, the facility will typically not be released from PCC groundwater monitoring. The Director may release a facility from PCC groundwater monitoring during any phase of monitoring as long as:

- corrective action is complete;
- no constituent exceeds a groundwater protection standard; and
- a trend analysis clearly indicates all constituent levels are either stable or decreasing.

The trend cannot be influenced by remedial measures that may have been performed at the site that were not part of a required corrective action plan. Any decision to release a facility from post closure groundwater monitoring should consider how close the constituent levels are to the groundwater protection standard.

If an owner or operator is allowed to discontinue groundwater monitoring, monitoring wells will continue to be maintained or a detailed well abandonment procedure must be submitted to the DEQ for approval prior to wells being abandoned unless a procedure is not already provided in the facility permit.

III.C.4. Surface water monitoring

Pursuant to the Waste Guidance Memorandum “Surface Water Impacts at Solid Waste Landfills”, DEQ Waste Division staff will evaluate landfills for unpermitted discharges of leachate or other pollutants to State waters. Landfills are required to be closed in a manner that controls, minimizes, or eliminates, to the extent necessary to protect human health and the environment, the post-closure escape of uncontrolled leachate, surface runoff, or waste decomposition products to surface water as authorized by 9 VAC 20-80-250.E.1.a, 260.E.1.a, and 270E.1.a of the VSWMR. The Director will not release the owner or operator from PCC monitoring if there is a suspected unpermitted discharge from the closed units. The DEQ will require the owner or operator to confirm the presence and nature of suspected contaminants entering surface waters and determine the contribution of leachate, contaminated ground water, or landfill gas to the problem.

Where there is a suspected unpermitted discharge from the facility, the DEQ Waste staff will consult with DEQ’s Water staff to determine the proper course of action to evaluate the nature and extent of the discharge, the extent of problems associated with the discharge, and to document any biologic impairment or chemical impact to the surface water body. This cooperative arrangement may involve water sampling and benthic evaluation. Where impairment or impacts are noted, Water guidance (1988 guidance and Water Guidance 00-2010) notes that action will be deferred to the Waste Division programs to remediate the discharge until all possible remedies are exhausted. As per the Waste Guidance Memorandum noted above, the remediation of these surface water impacts may be addressed as part of ground water corrective action (9 VAC 20-80-310), in the operations plan (20-80-250.C, 260.C, or 270.C), in the closure provisions (20-80-250.E, 260.E, and 270.E) of the VSWMR, or under a permit amendment or compliance/enforcement mechanism.

Where a facility has surface water monitoring requirements in the groundwater monitoring plan, the permit, the operations plan, or other plan, DEQ staff will evaluate the facility’s compliance with this plan. If the required monitoring has not been conducted according to the plan during the PCC period, the DEQ may take further compliance or enforcement action to require additional monitoring to evaluate any potential or actual impacts to the surface water in the vicinity to ensure protection of human health and the environment.

III.C.5. Gas monitoring review

Authorization to cease gas monitoring and control shall be based on a demonstration by the operator that there is no potential for gas migration beyond the facility boundary or into facility structures. (9 VAC 20-80-280 A.2). The DEQ’s acceptance of the demonstration however does

not relieve facilities from requirements to perform monitoring as required by other State, Federal or local regulations.

The DEQ will evaluate the following:

III.C.5.a. Response to request for modification of monitoring network

The Director will not release the owner or operator from PCC gas monitoring and control requirements if the owner or operator has failed to install additional gas monitoring or gas control measures if requested or if the gas monitoring network is inadequate. An adequate gas monitoring plan/network must be in place for a minimum of 1 year to allow the migration of gas to be evaluated. A permitted and approved gas management plan will be considered adequate unless the DEQ has requested additional gas wells, appurtenances or information.

III.C.5.b. Monitoring frequency and location

The Director may not release the owner or operator from PCC gas monitoring and control requirements if the gas levels at the facility cannot or have not been evaluated via subsurface monitoring (such as monitoring probes or gas monitoring wells) or demonstrated to DEQ that gas migration could not occur along a specific pathway owing to geologic or hydraulic barriers. The DEQ may require additional monitoring if gas monitoring has not been conducted or satisfactory demonstration has not been made as required during the PCC period.

The most recent gas monitoring events will be evaluated in order to determine if additional gas monitoring events are warranted. The DEQ will require additional gas monitoring if data gaps exist in the most recent monitoring events.

Violations of the VSWMR, permit or the gas management plan will be evaluated by compliance staff to determine if further compliance or enforcement action is necessary. The DEQ may also require the owner or operator to submit information sufficient to demonstrate that the monitoring that has been performed even if it is less than 10 years/30 years is protective and appropriate.

III.C.5.c. Gas concentrations at the facility boundary and facility structures

The Director will not release the owner or operator from PCC gas monitoring and control requirements if gas levels exceed regulatory thresholds. Monitoring data, at a minimum, must demonstrate the levels of gas migrating from the disposal area has stabilized or are decreasing. If the property boundary has been modified due to an exceedance of the LEL at a previous property boundary, note any potential problems or data gaps.

III.C.5.d. Corrective action

If corrective measures have not been put in place as required by the VSWMR, permit or the gas management plan to correct a gas migration problem, the Director will not release the owner from PCC gas monitoring and control requirements. The impact of the remedial measures on the

gas levels at the site should be considered when evaluating release from PCC gas monitoring and control requirements.

III.C.5.e. Effectiveness of corrective action

The Director will not release the owner or operator from PCC gas monitoring and control requirements if remedial measures have been ineffective in decreasing methane levels. If the measures have been effective, evaluating gas levels for a period of time (minimum 3 years) after the gas levels have decreased below regulatory thresholds shall be required prior to releasing the facility from PCC gas monitoring requirements.

III.C.5.f. Active systems

If an active system has been installed, the owner or operator must demonstrate there is no potential for gas migration beyond the facility boundary or into facility structures as a result of discontinuing this system. Evaluating gas levels for a period of time (minimum 3 years) without the system operating shall be required prior to releasing the facility from PCC gas monitoring and control requirements.

III.C.5.g. Monitoring records

If the facility has not maintained monitoring records for the PCC period, then the Director will not release the owner or operator from PCC gas monitoring and control requirements and will require additional monitoring.

9 VAC 20-80-280 D requires records of monitoring to be kept through closure and post-closure and failure to do so may constitute a violation.

III.C.5.h. CDD and Industrial Landfills

In the case of CDD and Industrial Landfills (ILF), gas monitoring shall be performed a minimum of quarterly for one year to demonstrate to DEQ that gas migration is not exceeding regulatory standards at the facility boundary or in facility structures. Monitoring probes should be installed at the facility boundary sufficient to demonstrate gas migration is not occurring unless the owner or operator has demonstrated to DEQ that gas migration could not occur along a specific pathway owing to geologic or hydraulic barriers.

If gas is detected, a decomposition gas venting system and gas monitoring program shall be required in accordance with 9 VAC 20-80-280. If gas is not detected, a decomposition gas venting system or monitoring program may not be required.

If an owner or operator is allowed to discontinue PCC gas monitoring, gas wells must be maintained or a detailed well abandonment procedure must be submitted to the DEQ for approval – unless one is already provided in the facility permit, prior to wells being abandoned.

III.C.6. Leachate generation and management review

For facilities managing leachate, the VSWMR allow for an owner or operator to stop managing leachate if the owner or operator demonstrates the leachate no longer poses a threat to human health and the environment (9 VAC 20-80-250 F.1.b, 9 VAC 20-80-260 F.1.b, and 9 VAC 20-80-270 F.1.b). The owner or operator shall submit information to the DEQ documenting that leachate no longer poses a threat to human health and the environment. Information to be submitted includes the amount of leachate generated during the life of the facility, current leachate generation rates, composition of the leachate, proximity to surface water and wetlands, and information on how discontinuation of leachate management systems will be achieved.

Any previous leachate management system failures and alleged violations related to leachate systems during the active and PCC phases shall be addressed and discussed.

In order to evaluate the leachate generated and leachate management at the facility, the DEQ will review the following:

III.C.6.a. Testing of leachate

Determine whether the facility is currently generating leachate. If the facility is generating leachate, the composition of the leachate shall be evaluated for the constituents in either Table 5.1 or Table 5.5 based on the most recent phase of groundwater monitoring that the facility has completed. The analysis of the contents of the leachate shall be provided as part of the demonstration that the leachate does not pose a threat to human health and the environment.

III.C.6.b. Leachate generation rate

The facility shall provide information on the amount of leachate generated and collected by leachate collection systems or seep collection systems during the PCC period. If the information is unavailable, the Director may not release the owner or operator from PCC.

III.C.6.c. Leachate estimates

9 VAC 20-80-290 A. requires the owner or operator to provide estimates of the amount of leachate to be generated in the future. The Director will not release the owner or operator from PCC care when the estimates are not available.

Coordination with the water division for possible permitting may be necessary if leachate is still being generated at the facility.

III.C.7. Stormwater management review

In order to evaluate the stormwater management at the facility, the DEQ will review the answers to the following:

- Is solid waste entering surface water or groundwater?
- Are stormwater management controls functioning properly?
- Is the facility vegetated adequately to allow continued proper operation of stormwater controls with minimal maintenance?

The Director may extend the PCC period.

III.C.8. Cap integrity

The DEQ will perform a site visit to inspect the condition of the facility. The inspector will examine the entire site for evidence of previous disturbances of the cap (including a survey of structures constructed on the disposal area), the presence of vegetative cover, and evidence of erosion. In order to evaluate the conditions at the facility, the DEQ will review the answers to the following:

- Does vegetation maintenance prevent the final cover from being inspected (is mowing required)?
- Is any waste visible at the facility? This includes illegal dumping, failure of the final cover to cover the waste, failure of any side-slopes, and any litter located at the facility.
- Are there any places where the vegetation is not well established on the final cover? (surviving first mowing and no bare spots without vegetation)
- Were any areas observed where settlement or subsidence of the waste has occurred?
- Were any areas observed where significant erosion of the final cover has occurred?
- Was evidence of leachate seeps observed?
- Were any odor or vector problems noted?
- Were any puddles observed?
- Were there any grading problems present that would result in erosion or storm water management problems that could lead to the exposure of the waste mass?
- Do facility records show repairs or uncorrected problems with the final cover system within the past 3 years? (vegetation, subsidence, erosion, leachate seeps, odors/vectors, puddles/regrading)
- Are the stormwater controls able to contain runoff? Are they in need of cleaning?

If the answer to any of the above questions is yes, then there may be problems or concerns about the final cover's integrity that shall be corrected or addressed before the Director will release the owner or operator from PCC cap maintenance. Frequent or repeated repairs of a given area could be cause for the DEQ to require additional PCC for cap maintenance.

III.C.9. Site security

In order to evaluate the site security at the facility, the DEQ will review the answers to the following:

- Are signs posted stating the site has closed and that waste is no longer accepted at this facility?

- Are gates and fences or other barriers used to prohibit unauthorized entry to the site along the entire boundary?

If the answer to either of the two preceding questions is no, then site security shall be corrected before the Director will release the owner or operator from PCC. Any use of the site following the PCC period may require continued restricted site access. If an end use is planned at the facility, it shall be compatible with the waste that remains in place, not invite additional disposal of waste and not damage the integrity of the landfill cap.

DEQ shall be flexible with site security when there is a planned end use for the site as long as cap integrity can be maintained.

III.C.10. Post-closure care plan review

The DEQ will also consider any additional PCC requirements included in the facility's PCC plan when determining the length of the PCC period. In some cases, a PCC plan may have been placed in a facility's operating record without being reviewed or approved by the DEQ (plans were required to be placed in the operating record prior to Oct. 9, 1993). Regardless of whether the DEQ has approved the PCC plan, if a facility has not been performing activities outlined in the PCC plan in the facility's operating record or the VSWMR, the Director may consider extending the PCC period.

IV. ADMINISTRATIVE PROCEDURES

Two copies of the request to be released from PCC requirements shall be submitted to the appropriate DEQ regional office Waste Compliance Manager. Upon receiving the certification and the evaluation, the DEQ will acknowledge receipt of the package within 30 days of receipt. DEQ will review the PCC certification and evaluation, as well as perform a site inspection to verify PCC requirements have been met and to examine current site conditions. DEQ will complete the review within 180 days of receipt of the PCC certification and evaluation. If additional information is required as a result of the review, a Notice of Deficiency (NOD) letter will be prepared and sent to the owner/operator, stating that all PCC activities will continue at the facility until the new information is submitted and evaluated and the DEQ releases the facility from PCC responsibilities.

IV.A. Compliance review

Regional compliance staff shall complete applicable sections of the attached checklist (*Attachment 1*) outlining the criteria to be considered when evaluating if PCC requirements shall be decreased, increased, or terminated.

IV.B. Groundwater review

Requests involving changes to PCC groundwater monitoring requirements shall be forwarded to the Office of Waste Permits, Groundwater section for review. Groundwater staff shall review the request for the effect on human health and the environment and complete applicable sections of the checklist (*Attachment 1*).

IV.C. Financial assurance

After the regional office staff and/or groundwater staff has completed their review, regional permitting staff will contact the Office of Financial Assurance (OFA) to notify them of the intent to modify the PCC period. All notifications to the OFA must specify if any PCC requirements are being decreased, increased, or terminated.

If changes to the PCC plan impact the PCC cost estimate, a revised PCC cost estimate will be reviewed by regional permitting staff and will be provided to the OFA. The OFA will revise the amount of financial assurance to be provided accordingly. Additionally, if changes are required to the PCC plan, an appropriate permit amendment will need to be processed to incorporate the changes into the permit.

IV. D. Public Participation

The owner or operator shall discuss the results of the PCC termination application (whether for full or partial release) in a public meeting following notification by the DEQ for tentative approval of an administrative and technically complete application. Note: If the applicant met the requirements for public participation under a major amendment for early termination, public participation for the PCC termination application is not required.

1. The owner or operator shall publish a notice once a week for two consecutive weeks in a major local newspaper of general circulation informing the public of the results of the draft approval of the PCC termination application. The notice shall include:
 - a. The name of the facility and location of the facility;
 - b. A statement indicating the PCC activities being terminated as a result of the PCC termination application demonstration proposed;
 - c. A statement that the purpose of the public participation is to acquaint the public with the technical aspects of the proposal and how the standards and the requirements of these regulations will be met, to identify issues of concern, to facilitate communication and to establish a dialogue between the permittee and persons who may be affected by the facility;
 - d. Announcement of a 30-day comment period, in accordance with 4 below, and the name, telephone, and address of the owner's or operator's representative who can be contacted by the interested persons to answer questions or where comments shall be sent;

- e. Announcement of the date, time, and place for a public meeting held in accordance with 3 below; and
 - f. Location where documentation previously submitted to the DEQ, in support of the PCC termination application and DEQ tentative approval, can be viewed and copied.
2. The owner or operator shall place a copy of the documentation and support documents in a location accessible to the public in the vicinity of the proposed facility.
 3. The owner or operator shall hold a public meeting not earlier than 15 days after the publication of the first notice required in 1 above and no later than seven days before the close of the 30-day comment period. The meeting shall be held to the extent practicable in the vicinity of the proposed facility.
 4. The public shall be provided 30 days to comment on the technical and the regulatory aspects of the proposal. The comment period will begin on the date the owner or operator publishes the first notice in the local newspaper.

The results of the public participation shall be summarized and the applicant's response to comments received during the public participation shall be submitted to the DEQ for review. The DEQ shall complete the review within 30 days of receipt of the comments and issue a final approval or NOD.

IV.E. Permit

The Virginia Waste Management Act and the VSWMR do not authorize the DEQ to revoke or terminate the permit based solely on the owner or operator being released from PCC requirements. The owner or operator will be released from PCC requirements and the permitted SW unit status will be changed to "closed" in CEDS.

If the length of the PCC period is extended, OFA staff will be notified of the Director's decision to extend the PCC period. Financial assurance must be provided for a minimum five-year period or timeframe as specified in a previously approved corrective action plan or PCC plan, whichever is greater. When the PCC period is extended, the Permittee will be required to amend the PCC plan and provide a minor amendment to the facility permit, in accordance with 9 VAC 20-80-620 Table 7.2.E.2.

If the PCC period is decreased (to a period less than the required 10 or 30 years as applicable), OFA staff will be notified of the Director's decision to decrease the PCC period for the facility. To decrease the PCC period, a major permit amendment is required in accordance 9 VAC 20-80-620 Table 7.2.E.3. Upon receiving notification that the permit has been modified in either case, financial assurance for the facility will be modified accordingly.

Decisions to increase, decrease, or terminate the PCC requirements are case decisions on the part of the Director. Any letter announcing such a decision must be signed by a person with the authority to amend a permit. The letter should include the following language.

“As provided by Rule 2A:2 of the Supreme Court of Virginia, you have 30 days from the date of service of this decision to initiate an appeal of this decision, by filing notice with:

Director
Virginia Department of Environmental Quality
ATTN: Waste Division
P.O. Box 10009
Richmond, Virginia 23240-0009

In the event that this decision is served to you by mail, three (3) days are added to that period. Please refer to Part Two of the rules of the Supreme Court of Virginia, which describes the required content of the Notice of Appeal, including specification of the Circuit Court to which an appeal is taken, and additional requirements governing appeals from decisions of administrative agencies.”

Rule 2A:2 can be found at the following link.

<http://leg1.state.va.us/cgi-bin/legp504.exe?000+scr+vscr-2AZ2>

V. LIABILITY BEYOND THE END OF POST-CLOSURE CARE PERIOD

Closure and PCC requirements are intended to prevent future releases from closed landfills. However, in the event that a future release does occur, certified compliance with those closure and PCC requirements does not relieve owners and operators from the responsibility to take steps as necessary to protect human health and the environment.

The termination of post-closure monitoring and maintenance is self-certifying and self-implementing, meaning the operator is responsible for ensuring that the information contained in the certification is pertinent and correct and the operator is responsible for any future deficiencies or adverse impacts to human health and the environment. It is the responsibility of the current owner and any future owners to prevent the facility from becoming an open dump, hazard or nuisance.

In the event that releases are observed from the facility in the future, criteria listed under Part IV, Open Dump, of the VSWMR will be used to determine if the facility has created a substantial present or potential hazard to human health or the environment. If the site meets any of the open dump criteria in the future, the Director will require additional activities as may be necessary on the part of the facility owner or future owners to correct such deficiencies.

The DEQ suggests at a minimum the owner or future owners of the facility:

- Inspect the cap periodically, no less than quarterly, and after major storm events for evidence of settlement, subsidence or erosion that could compromise the effectiveness of the final cover system. Repairs must be made as needed to the final cover system.
- Protect the integrity of the cap during the design and installation of all utilities, lighting, parking areas, roads and buildings.
- Inspect storm water conveyances, no less than quarterly, and after major storm events for evidence of erosion. Conveyances must be maintained including ditches and ditch lining, pipes and storm water/sediment ponds.
- Ensure that any proposed buildings and other structures are designed and built to prevent the accumulation of decomposition gasses.
- Maintain the survey plat and deed notation required by the VSWMR 9 VAC 20-80-250.E.5, 260.E.4, and 270.E.4, in perpetuity with the local land recording authority. If the property is subdivided in the future, the survey plat and deed notation required by the VSWMR 9 VAC 20-80-250.E.5, 260.E.4, and 270.E.4 needs to be placed on the subdivision plat and deed and recorded with the local land recording authority.

NOTES

- 1) §62.1-44.5 of the State Water Control Law (in the Virginia Code) states that except in a compliance with a permit it shall be unlawful to discharge sewage, industrial wastes other wastes or any noxious or deleterious substance. This section of the statute also states it is likewise unlawful to change the physical, chemical or biological properties of state waters in a manner that makes them detrimental to public health or animal or aquatic life. The definitions section of the §62.1-44.3 of the Code of Virginia states that State waters includes waters both above and below ground.
- 2) §10.1-1183 of the Code of Virginia states that it is the policy of the Department of Environmental Quality to protect the environment of Virginia.
- 3) Article XI, Section I of the Virginia Constitution of Virginia states that it is the policy of the Commonwealth to protect the atmosphere, lands and water of the Commonwealth from pollution impairment or destruction.

ATTACHMENTS

[Attachment 1](#) - Termination of Post Closure Care Checklist

[Attachment 2](#) – Termination of Post Closure Care Approval Letter

Attachment 3 – Partial Termination of Post Closure Care Approval Letter

Attachment 4 – Termination of Post-Closure Care Public Notice Request

REFERENCES

Virginia Department of Environmental Quality, *Submission Instruction 20: Components of the Professional Engineer's Certification and Evaluation*

Virginia Solid Waste Management Regulations Amendment 4

<http://www.townhall.virginia.gov/chapter/ViewChapter.cfm?Vac=210&Chapter=80>

Virginia Waste Management Act

<http://www.deq.virginia.gov/regulations/documents/wastelaw2004.doc>